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## RECORD OF ORAL HEARING

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte TOOD L. LYDIC, TAMO BIANCHI,  
and JAMES A. DECKER

Appeal 2007-1462  
Application 09/664,118  
Technology Center 3600

Oral Hearing Held: January 23, 2008

Before WILLIAM F. PATE, III, HUBERT C. LORIN, and ANTON W. FETTING, Administrative Patent Judges

ON BEHALF OF THE APPELLANT:

BLYNN . SHIDELER  
The BLK Law Group  
3500 Brokktree Road  
Suite 200  
Wexford, PA 15090

35 The above-entitled matter came on for hearing on Wednesday, January 23,  
36 2008, commencing at 9:00 a.m., at the U.S. Patent and Trademark Office,  
37 600 Dulany Street, Alexandria, Virginia, before Ashorethea Cleveland,  
38 Notary Public.

## PROCEEDINGS

3 MR. SHIDELER: Well, thank you very much for taking the time to  
4 see us this morning. What we're talking about here, as you read in the case,  
5 we're talking about rail cars and in particular we're talking about the center  
6 sill of a rail car.

7 The novelty here is in the center sill. The center sill is the primary  
8 structural component of a rail car. It is the backbone of the rail car. It's the  
9 piece that has to take all of the live loads and all of the loading going back  
10 and forth.

11 Now, today I brought with me the inventor, Todd Lydic. Todd has  
12 worked with Freight Co. American; before that, it was Johnstown America,  
13 and before that it was Bethlehem Steel. I think it was a division of  
14 Bethlehem Steel. And he's been working there for 35 years.

15 In addition to working for 35 years, the rail car art is peculiar in that it  
16 has a very long life span. When you make a rail car -- when you started in  
17 1976, you were mentioning that the required life span was 40 years plus  
18 time. If you revitalized it, you could get ten more years out of it. So, you  
19 created a product that lasted for 50 years.

20 Why am I mentioning that? Well, that gives him active experience in  
21 working in rail cars over the last 70, 80 years in time. So, he has seen a lot  
22 of these center sills.

23 The issue that we are talking about today, the subject matter of the  
24 invention, is a cold formed center sill.

25 For the last hundred years, there are two known, accepted methods of  
26 making center sills.

1        This is an example of existing center sill made by the prior process  
2 and it's two hot-welded sections that are welded together. This is a  
3 fabrication. The other known fabrication method of course is to just take flat  
4 weld sheets and weld them until you get the fabricated design that you want.

5        The fabricated welded sections tended to be the more common center  
6 sills, so much so that this section is known as a center sill section. It is in all  
7 the literature. It's throughout all the art of record, the making, shaping and  
8 treating of steel which is generally considered the Bible of the steel-making  
9 art, and it teaches and shows a Z-shape section but it shows a welding  
10 schedule for Z-shape sections and how they're going to make them.

11       Do you want to see this?

12       JUDGE PATE: No. That's okay.

13       MR. SHIDELER: You can see it from here.

14       The difficulty with this or one of the problems that they were facing  
15 with this is, as we described in the specification, when you weld these  
16 together, it creates irregularities along the length of it; and you can see it  
17 here. It also creates warping issues and changes in chamber which makes it  
18 a bear to create the rest of the car. You have to account for that when you're  
19 attaching something to this welding.

20       They would have to do other sorts of issues to address that. If they're  
21 making attachments here, they have to build on top of it.

22       This is the essence for what they're going after; and what we've done  
23 is developed a cold forming method and resulting in a completely different  
24 cold formed center sill. This is an example of it. You'll see this in the spec;  
25 and that cold formed center sill, when it was developed, had to be -- there  
26 was no method of making it. They had to work with a company called

1 Canadian Meadow Rolling Mill where some of the joint inventors had come  
2 from to find out whether this idea was even possible and they --

3 JUDGE PATE Now, cold rolling is usually for thin sections; right?

4 MR. SHIDELER: Cold forming is known for small structural shapes.

5 JUDGE PATE: Kind of like for the studs that are in this wall?

6 MR. SHIDELER: You got it. Exactly.

7 JUDGE PATE: So, why is it not obvious to make this center sill?

8 MR. SHIDELER: Because we have a hundred of years of experience  
9 that says, if you're going to make them, hot weld them.

10 If you said cold roll me a center sill right now, there isn't anybody  
11 other than the applicants who could have done it, who can do it. They had to  
12 create the facility to do it.

13 When you're cold rolling thicker sections, you have another issue, as  
14 well. The energy required goes up exponentially as you get to the thicker  
15 sections. So, you have a facilities issue. You couldn't do it. There's no mill  
16 that could do it. So, you couldn't order it.

17 The second issue, if you look at this, this particular shape, as well, you  
18 have some other issues. When you're cold forming it, you need to have  
19 it -- it's helpful to have a uniform shape. This is made out of a coiled  
20 material that is flattened out and then sent through a number of bending  
21 wheels to do it.

22 If you look at this shape right here, these are -- when you're hot  
23 forming a section, you can make what's known as an irregular section. This  
24 is an irregular shape. The reason that's important is, the center of  
25 gravity -- is the center of gravity the right term? The center line of this  
26 could be where you want it.

1        When you're using a uniform section, you had to do something else.  
2        Well, anyway, this is a center sill of a car. You have to get to the  
3        interior of this because you have a lot of components running through the  
4        center of it.

5        So, you'll see, to address that problem you have little -- additional  
6        material added on here in a way that you could, A, form it and, B, not  
7        interrupt the center sill sections.

8        To answer your question, it hasn't been done before. Could you do it?  
9        Well, there wasn't anybody who could do it; and then you had to address a  
10      number of other issues associated with doing it.

11      JUDGE LORIN: Excuse me. You keep saying there was nobody  
12      who could do it; but from what I understand, that's not because nobody knew  
13      how to do it. It was because there weren't any production facilities  
14      available.

15      MR. SHIDELER: Well, I would say, no one knew how to cold form a  
16      center sill for a rail car. It hadn't been done before. That is 100 years of  
17      teaching of hot rolling it.

18      JUDGE LORIN: Well, just because something hadn't been done  
19      before doesn't mean someone would not have known how to do it.

20      MR. SHIDELER: That's true but --

21      JUDGE LORIN: Is there anything particularly inventive about the  
22      cold rolling mechanism for this as opposed to whatever cold rolling  
23      mechanism there may be other than it has to accommodate something more  
24      thick?

1           MR. SHIDELER: It has to accommodate all the requirements of a  
2 center sill; but other than that, the techniques associated with this mill are  
3 the same cold forming techniques that are used with everything else.

4           But to address those issues, the rejection here stands on the making,  
5 shaping and treating of steel.

6           The rejection is -- in fact, Johnstown America is the primary  
7 reference. It's one of their earlier Rondola patents taken in view of making,  
8 shaping and treating of steel.

9           This book teaches you how to make this section. Your suggestion is  
10 that one of ordinary skill in the art reading this book -- or the Examiner's  
11 suggestion is, one of ordinary skill in the art reading this book that tells you  
12 this is how you form a center sill where the American Association of  
13 Railroad -- their center sill definition was hot formed sections that are  
14 fabricated together.

15           It would be obvious to one of ordinary skill in the art to ignore those  
16 teachings and cold form it; and that's simply -- that's turning it on its head.

17           After these folks have built the plans to do it, after they have created  
18 it, after there is a huge demand in the industry now for the cold formed  
19 center sill, yes, it's obvious; but it's after the fact, after we showed that we  
20 could do it, after you had to submit new definitions to the American  
21 Association --

22           MR. LYDIC: AAR.

23           MR. SHIDELER: AAR, American Association of Railroads, in order  
24 to get this accepted. Yes, then it becomes -- I agree with you that our  
25 disclosure, after you have the Eureka moment, if you will, and invest a lot of  
26 engineering time in order to their plant up and running, and work out all the

1 engineering details, yes, you're right. It's using traditional cold forming  
2 techniques but it's a little hindsight reconstruction now to say: Well, what I  
3 want you to do is ignore the expressed teachings of that and use this other  
4 steel-making technique.

5 There's a lot of steel-making techniques in there but when there's an  
6 expressed teaching, this is how you do it, it's inappropriate to suggest, well,  
7 one of ordinary skill in the art would discard that; and we have over a  
8 hundred years of rail car experience and to date this is the only cold formed  
9 center sill out there.

10 If I misstate anything, please jump up and let me know; and if you  
11 don't believe me, this is why we have the inventor here. He has over 70  
12 years of experience.

13 We have two ways of manufacturing prior art center sills. They're  
14 both with these hot-flame sections.

15 I think it's inappropriate to disregard the expressed teachings of these  
16 references and then come back after you read our disclosure and say: Well,  
17 yes, it's a standard technique. It's hours after we show you how to do it that  
18 these inventions become obvious. Remember, simplicity is the height of  
19 invention. Well, in this case, necessity is the mother of this invention.

20 MR. LYDIC: Absolutely.

21 MR. SHIDELER: In this circumstance, there's a number of other  
22 issues that drove them to look at -- we need to make sure. You know, how  
23 can we improve these designs? And this design goes against, again, a  
24 hundred years of evidence. My problem is, that's reflected.

25 There's nothing to support the obviousness claims that have been  
26 addressed in here. I hope that answers your question.

1        Now, I wanted to spend a little bit of time on some of the dependent  
2        claims.

3        JUDGE PATE: Go ahead.

4        MR. SHIDELER: The Examiner has taken the position that the prior  
5        art shows a one-piece center sill. We would disagree because the prior art  
6        that the Examiner is citing is a patent drawing and one of ordinary skill in  
7        the art would look at that and understand that to be fabricated in the  
8        conventional way, and there was no -- even hot formed. There's no  
9        one-piece section that was ever hot formed.

10       We have a dependent claim two which is an earlier version of this,  
11       which are two cold formed sections that are welded together. We don't  
12       believe that that's fairly taught.

13       If the Examiner is asserting that the prior art shows this one-piece  
14       construction, well, then we think that the two-piece construction set forth in  
15       claim two -- it would not be shown.

16       Alternatively, if he wants to take the position that that's suggested,  
17       then we have the one-piece construction in claim six.

18       The problem that I'm having with the dependent claims is, the  
19       Examiner is just dismissing everything as a matter of design choice.

20       We have another dependent claim, claim four, which defines the  
21       uniform thickness of this which is critical for cold forming; not so critical for  
22       hot welded sections.

23       In fact, hot welded sections, as evidenced in the making, shaping and  
24       treating of steel -- the center sill sections are called irregular shapes because  
25       they can have a larger frame at the bottom and different web thicknesses  
26       throughout. That's the advantage of having a hot rolled section.

1           We have a cold formed section. So, we have a uniform section  
2 throughout. The Examiner dismisses those limitations, as well. He says, it's  
3 a matter of design choice and those statements are completely unsupported  
4 in any rational basis.

5           Those are dependent issues. We certainly believe that the  
6 fundamental concept here is that a cold formed section is taught away from  
7 by the expressed teachings, that one of ordinary skill in the art -- when you  
8 read the prior art and it teaches you how to make a center sill, you would  
9 make the center sill in the manner that they teach you.

10          Questions.

11          JUDGE LORIN: Yes. I have a question. Is your view any different  
12 now that KSR has come down from the Supreme Court?

13          MR. SHIDELER: I think it's reenforced by KSR completely.

14          JUDGE LORIN: Because one of the rationales: You have your  
15 design here and you have cold formed. Both of those are known. You're  
16 combining the two, getting an expected result. Under KSR, that would be a  
17 rationale for saying, this would be obvious for someone with that skill; and  
18 even more than expected, is it predicted. That's what the Supreme Court  
19 wants to focus on. Are you getting a predictable result?

20          MR. SHIDELER: In that decision, they also mentioned that the key  
21 test is what one of ordinary skill in the art would be led to do. That's a  
22 fundamental issue there. They didn't --

23          JUDGE LORIN: No. No, that is not true. In KSR, they were taking  
24 a functional approach and they were looking at the elements of the  
25 invention, saying: What are the functions of these elements? If these

1 functions are known, you put them together and get predictable results. That  
2 would be obvious.

3 MR. SHIDELER: The question is, why do you put these two things  
4 together, cold forming and the center sill? Your functional starting point is  
5 at the end. You're starting with the invention. You're starting with the  
6 applicant's invention and going back saying, all the functional components  
7 of this invention are obvious.

8 JUDGE LORIN: The KSR moved away from having a strict  
9 motivational test. That's what made KSR an important decision.

10 MR. SHIDELER: We understand; but it doesn't go so far as to say  
11 that you can disregard the expressed teachings of the references which is  
12 what you're doing here.

13 JUDGE LORIN: No. Here you can see that the cold form is known  
14 and you can see that this element is known, albeit hot formed.

15 MR. SHIDELER: This element is known. This element is not  
16 known.

17 JUDGE LORIN: No. We understand that that's the invention. We  
18 know that's known and we also have prior teaching to cold formed.

19 MR. SHIDELER: You have no prior teaching of cold forming center  
20 sills; but cold forming is certainly a known technique.

21 JUDGE LORIN: Right.

22 MR. SHIDELER: Every invention is made up of existing nuts and  
23 bolts and existing processes; of course.

24 The key question, as pointed out in the recent Supreme Court  
25 decision -- that's what they started. The issue is, in that test it's not a strict  
26 approach. You can use all sorts of rationale. What I would like to say is,

1 you can't throw common sense. There's a lot of rationale basis for it. It  
2 doesn't have to be in the reference, per se. You don't have to have the  
3 teaching in the reference. But there's nothing in that decision that suggests  
4 you can throw out the expressed teachings of the prior art.

5 When the reference tells you this is how you make a center sill, to  
6 ignore that -- it goes beyond what the Supreme Court is saying. Otherwise  
7 you would vitiate every patent that has ever been granted.

8 JUDGE LORIN: So, let me see if I get your position correct. Are  
9 you saying that if this were now to be made in plastic, it would also be  
10 patentable?

11 MR. SHIDELER: I have no knowledge of -- I don't know what you're  
12 asking. I mean, if this is made out of plastic -- I don't know how to make it  
13 out of plastic.

14 JUDGE LORIN: No. Your position is that for a hundred or so years  
15 this element has been made using hot form.

16 MR. SHIDELER: Two methods. One is hot form sections and one is  
17 a fabricated of hot-rolled flat boarding.

18 JUDGE LORIN: Yes; and now you've taken a known other way of  
19 forming steel and applied that to this element.

20 MR. SHIDELER: We formed this element using known steel-making  
21 techniques; that's true, but the end result is a structure that hasn't existed  
22 before and goes against the expressed teachings of the references.

23 There's nothing in -- my wife's name is Kris; so, I always say the KSR  
24 decision as KRS. So, I always get it backwards. But the KSR decision.  
25 There's nothing in there that allows you to throw out the expressed teachings  
26 of a reference and it still requires -- the test when they set it out, the very

1 first paragraph or the very first paragraph of the opinion says: This is what  
2 we're looking for. This is a fundamental issue. And what they said is, the  
3 Federal Circuit was applying it too rigidly; and I have no problem with that.  
4 Bring common sense back here. But this is exactly the type of common  
5 sense that you can't ignore teaching.

6 We have a large amount of evidence to support it and --

7 JUDGE LORIN: Are there declarations for secondary considerations  
8 in this?

9 MR. SHIDELER: The long-felt need? We have no long-felt-need  
10 declarations in here. We have the teachings of all of the prior art references  
11 and the various chapters of the treaties that are in here; and every single  
12 reference makes them the same way, and what you're suggesting is -- I was  
13 mentioning it before. There are many other processes that are known.  
14 Could you make a center sill out of those? Well, I work with rapid 3D  
15 printing technology. Could you form a center sill out of that? Gee, I don't  
16 know how you would do it. If you could figure out a way to do it, I think it  
17 would be novel, even though the process itself is old.

18 The issue, fundamental issue again is, what is non-obvious? I have  
19 restated that position. Going against the expressed teachings of the prior art  
20 is inappropriate. Anyway, I don't want to beat that one to death; but that's  
21 where we are.

22 What other questions do you have?

23 JUDGE LORIN: I don't have anything further, counsel.

24 JUDGE PATE: I have no questions. So, we're going to take this case  
25 under advisement.

26 MR. SHIDELER: Okay.

1           JUDGE PATE: Thank you very much for your presentation.  
2           (Whereupon, at approximately 10:10 a.m., the proceedings were  
3           concluded.)